

A photograph of a wooden cube with a circular hole on its top face, resting on a light-colored surface. In the upper left corner, a white ring with a dark center is partially visible. The text is centered on the left side of the image.

DESIGNING FOR THE
MONTESSORI METHOD
OF EDUCATION

Architecture Thesis By Jennifer Nagel



PROJECT TYPOLOGY:

K-5 Educational Facility

LOCATION:

Bismarck, ND

JUSTIFICATION:

- Demand
- Lack of options
- Need for redefinition
- Site relevant
- Many benefits from Montessori Method

This project proposes the ideal environment for Montessori education by giving form to the possibilities and opportunities a school designed with this method presents.



ABSTRACT:

How can architecture improve the health and well-being of students in the learning environment?

How can design focus on child growth in all areas of their development, such as cognitive, emotional, social, and physical?

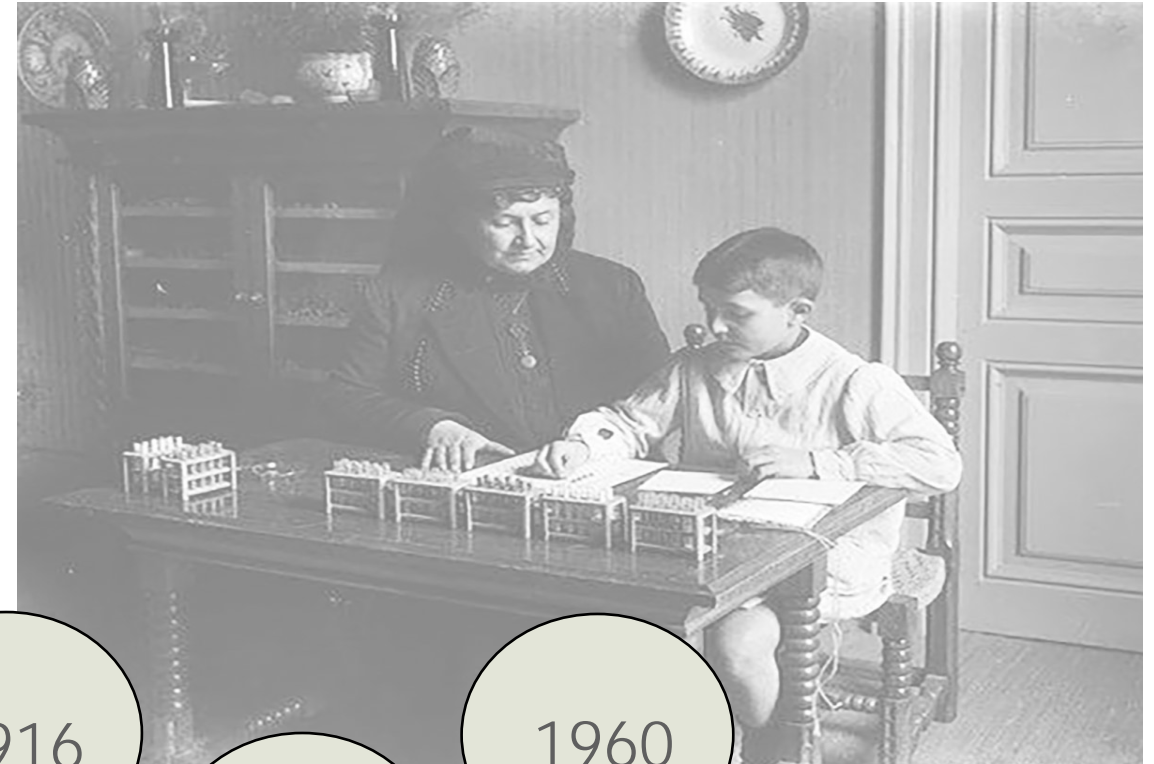
Can we as designers use the Montessori child-focused approach to learning and apply it to architecture for children's education?

WHAT IS MONTESSORI?

THE FOUNDER:

Dr. Maria Montessori (1870-1952)

YEAR: 1907



1907

1911

1916

1929

1960

"The child has a mind able to absorb knowledge. He has the power to teach himself." (The Absorbent Mind)

THE BASICS

- Montessori serves children from birth - high school
- Age group most served: 2-12 years old
- Approximately 4,500 certified Montessori schools in the US
- Most are private but some are public

20,000+

certified Montessori schools worldwide



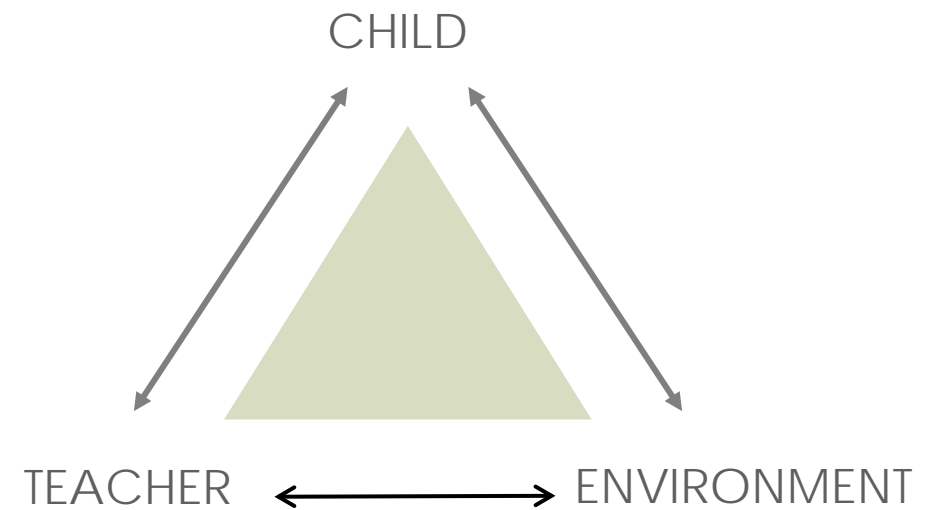
MONTESSORI HALLMARKS



“Montessori is an education for independence, preparing not just for school but for life.”

-Maria Montessori

- Child-centered
- Multi-age groupings
- Activity choices
- Work time
- Learning materials
- Play is a child's work
- An aesthetically pleasing learning environment



“The greatest sign of success for a teacher... is to be able to say, ‘The children are now working as if I did not exist.’”

-Maria Montessori

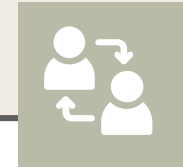


- Children typically have the same teacher for three years.



- Children work at various learning stations and groups according to their interests.

TEACHING STYLE



- Mixing age groups encourages older children to serve as role models and help for younger children.



ENVIRONMENT

- Contain many places for children to learn and play
- No focal center to the classroom
- Scale and proportions
- Natural materials
- Connection to Nature

Montessori classrooms are peaceful, happy places designed to meet the developmental needs of each child in every stage of life.

CASE STUDY



Christ the King Elementary School located in Mandan, ND.

PROJECT GOALS

Education and Development

Ease of Access

Scale and Perspective

Use of Technology

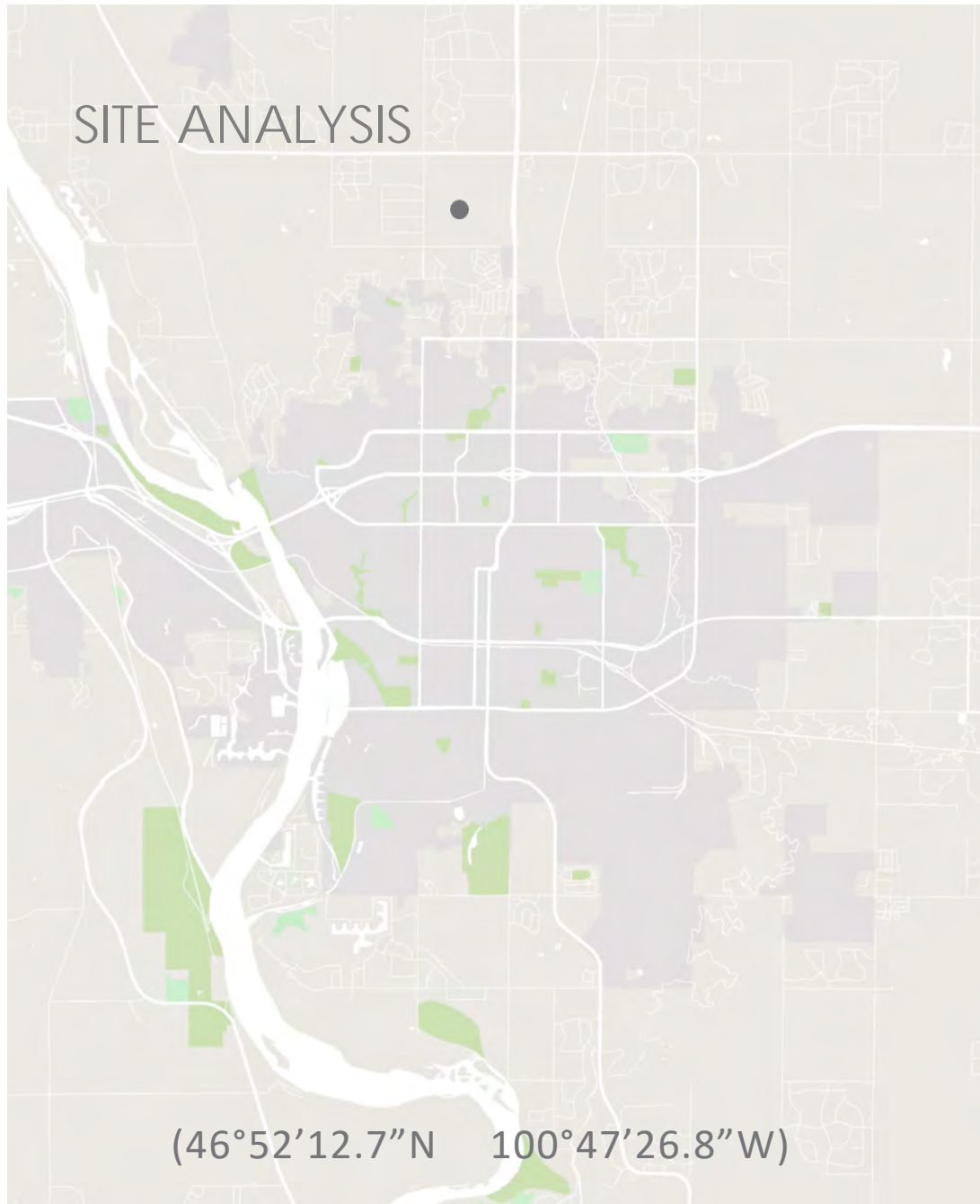
Community

Daylighting and Materials

Independence

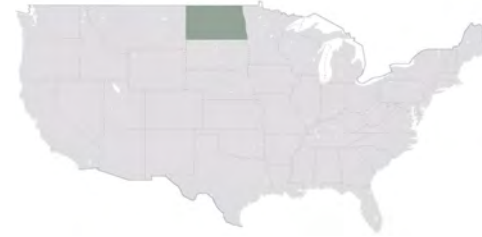


SITE ANALYSIS

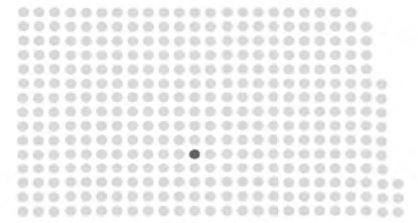


(46°52'12.7"N 100°47'26.8"W)

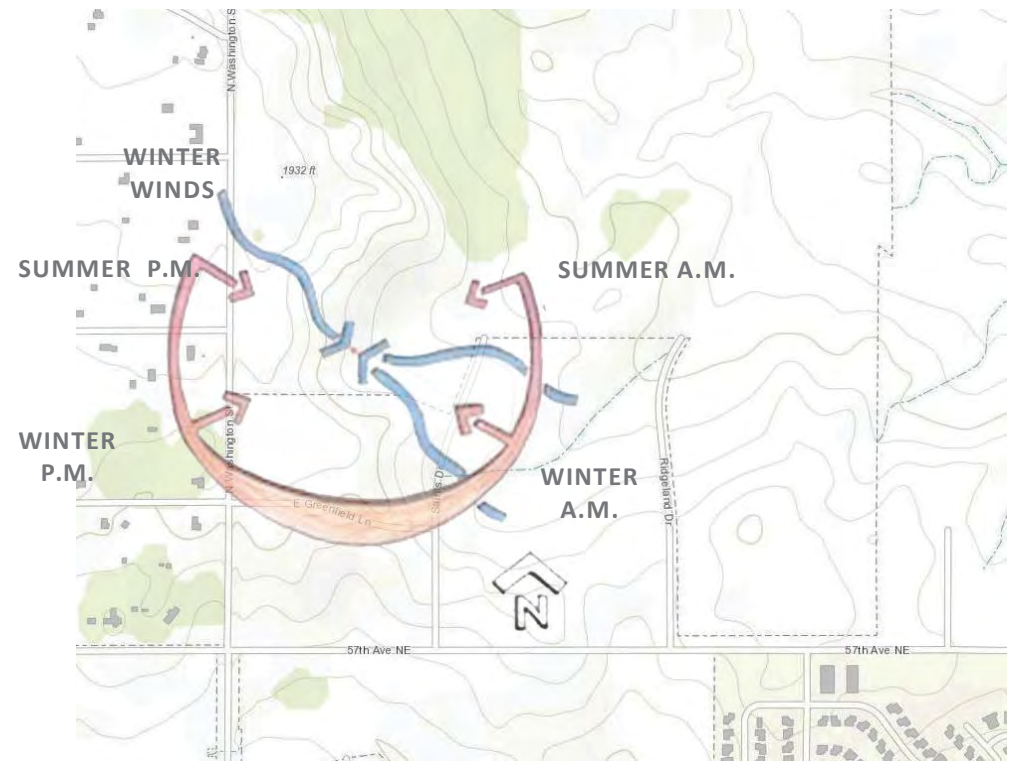
SITE LOCATION: Bismarck, ND



Midwest Region, United States



Bismarck, North Dakota



BISMARCK, ND DEMOGRAPHICS

GENDER



49.58%

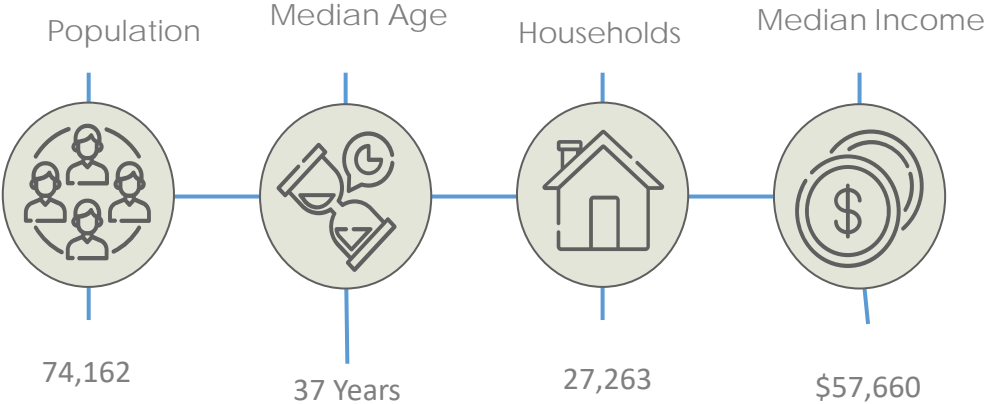


50.42%

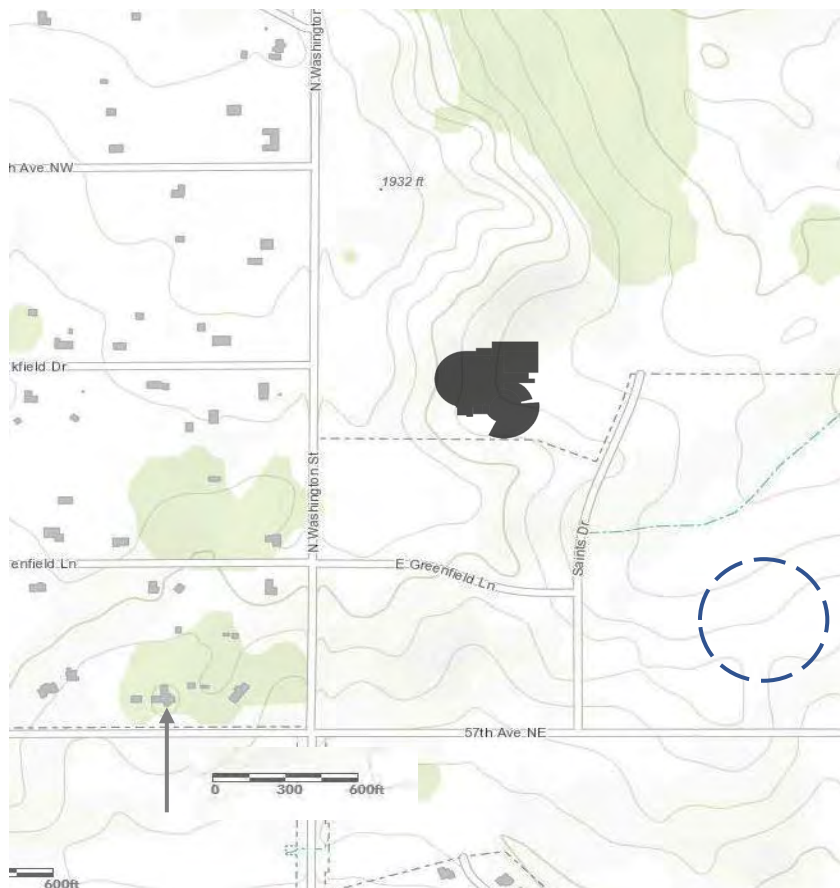
Annual
Precipitation:
15.4 inches

Average Wind
Speed:
10.2 mph

Second Largest
City In ND



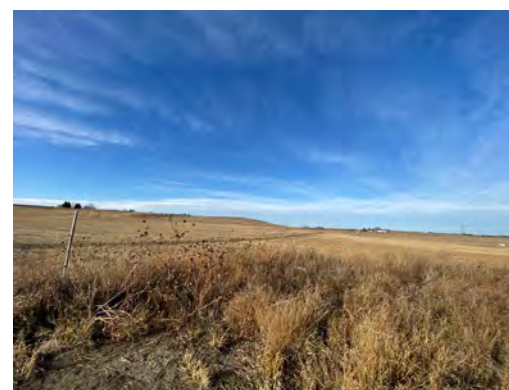
THE SITE



North



East

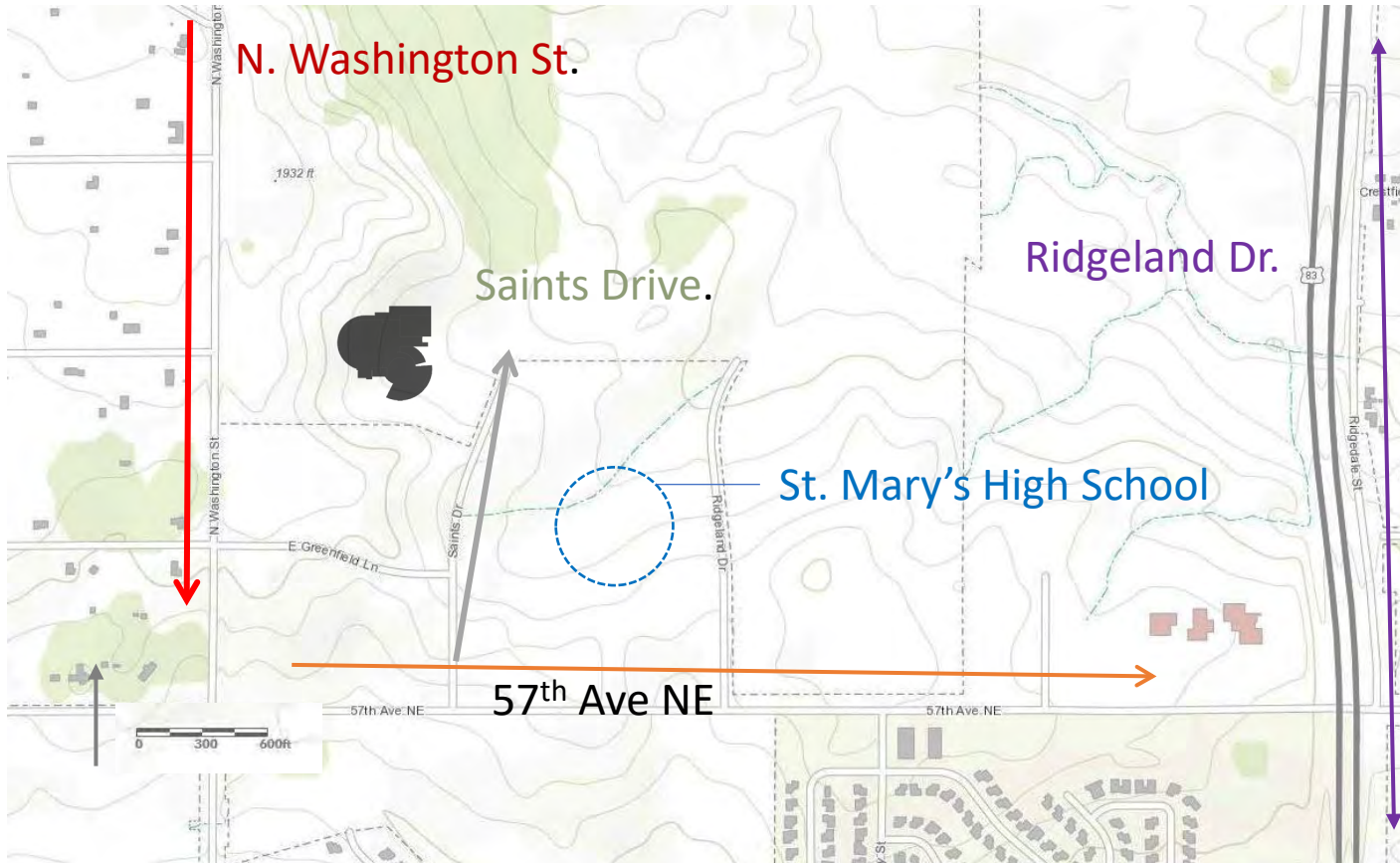


West



South

SURROUNDING AREA



St. Mary's Entrance



Saints Dr. Facing North



Saints Dr. Facing North

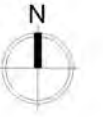
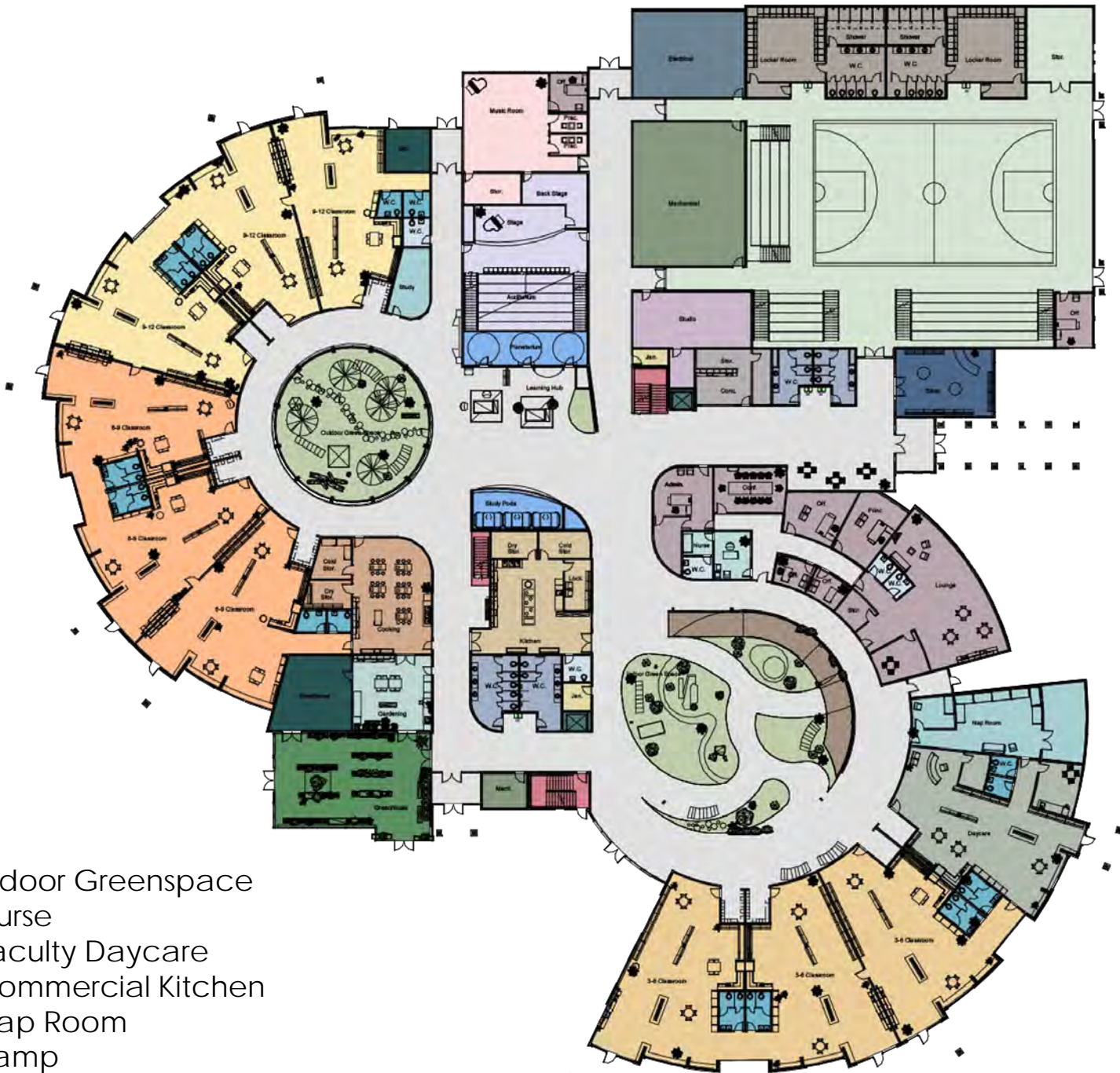
Main Entrance



LEVEL 1

- Store
- Gymnasium
- Locker Room
- Public Restroom
- Concessions
- Elevator
- Stairs
- Music Room
- Auditorium
- Administration
- Learning Hub
- Mechanical
- Electrical
- Studio
- Janitor
- Greenhouse
- Class Restroom
- Study Room
- Staff Restroom
- Outdoor Greenspace
- 3-6 Age Classroom
- 6-9 Age Classroom
- 9-12 Age Classroom
- Cooking Classroom
- Warehouse

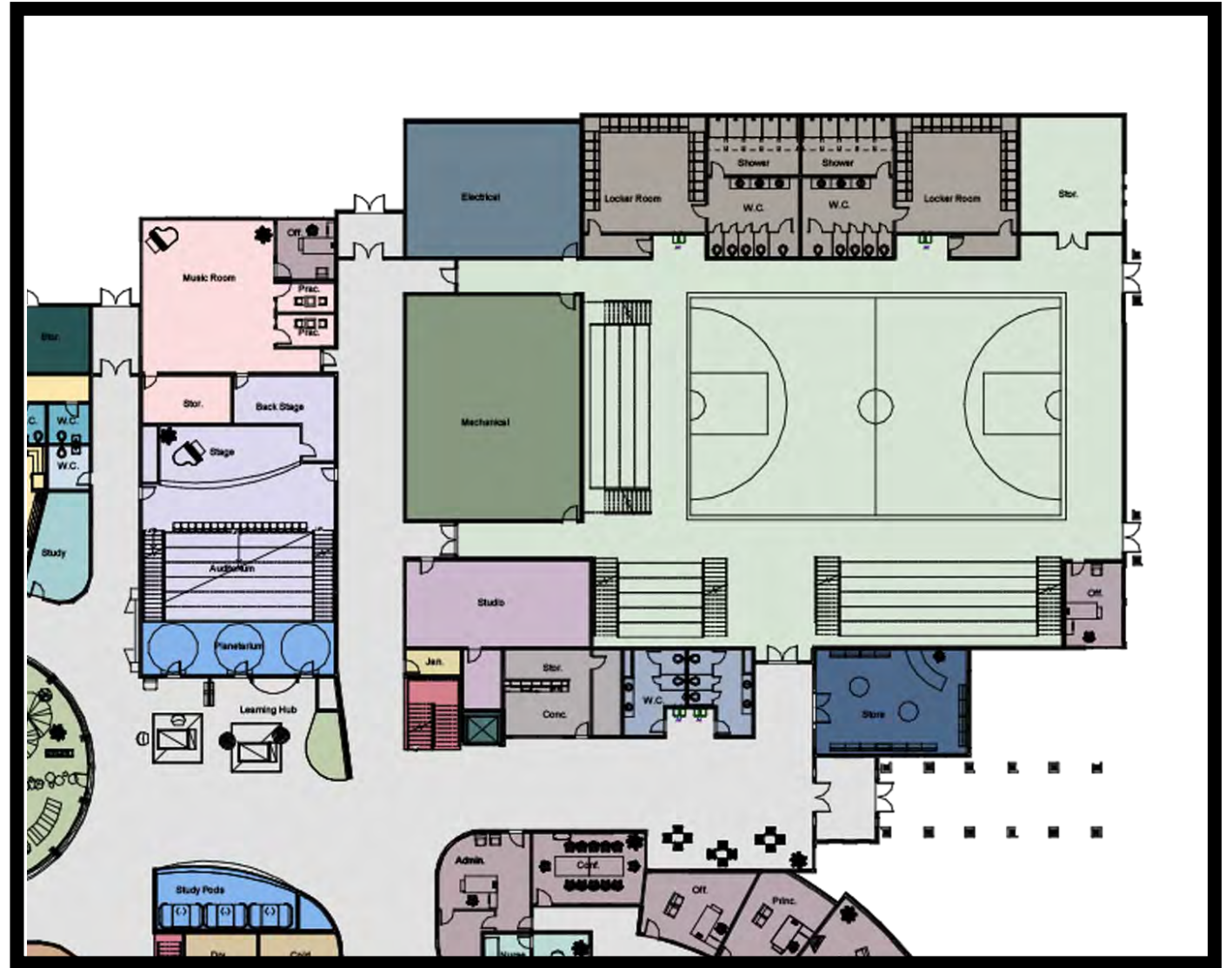
- Indoor Greenspace
- Nurse
- Faculty Daycare
- Commercial Kitchen
- Nap Room
- Ramp



LEVEL 1



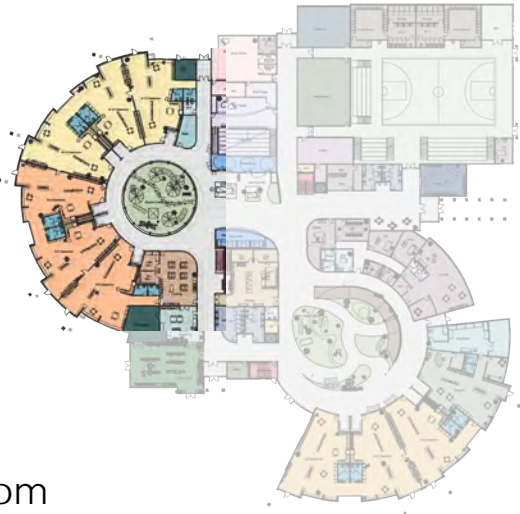
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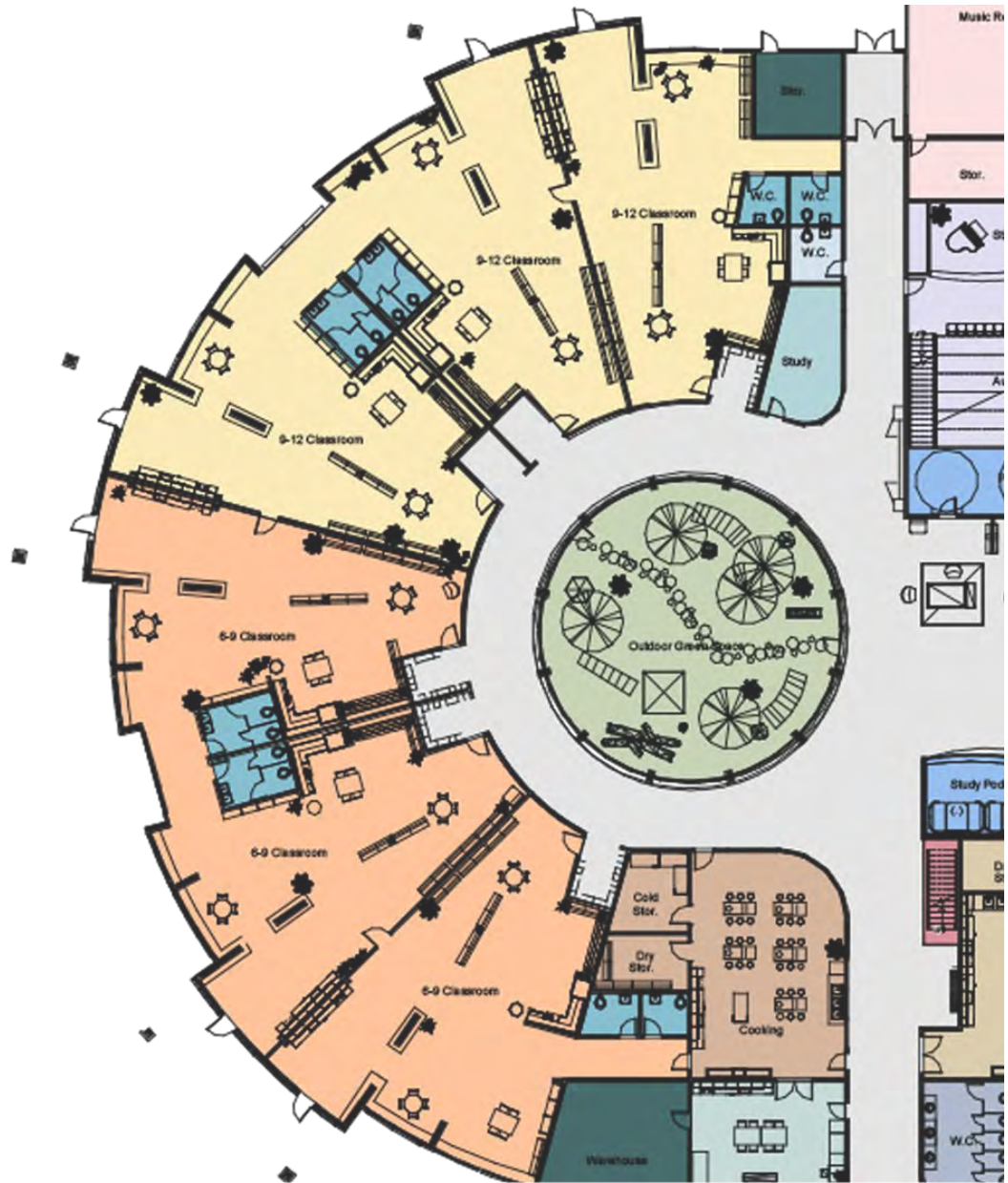


DISCOVERY ZONE

LEVEL 1



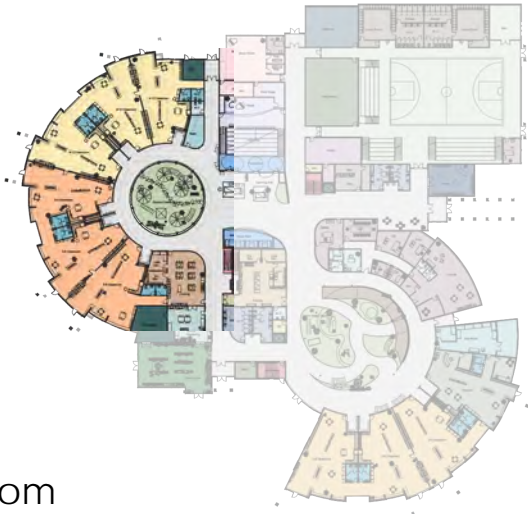
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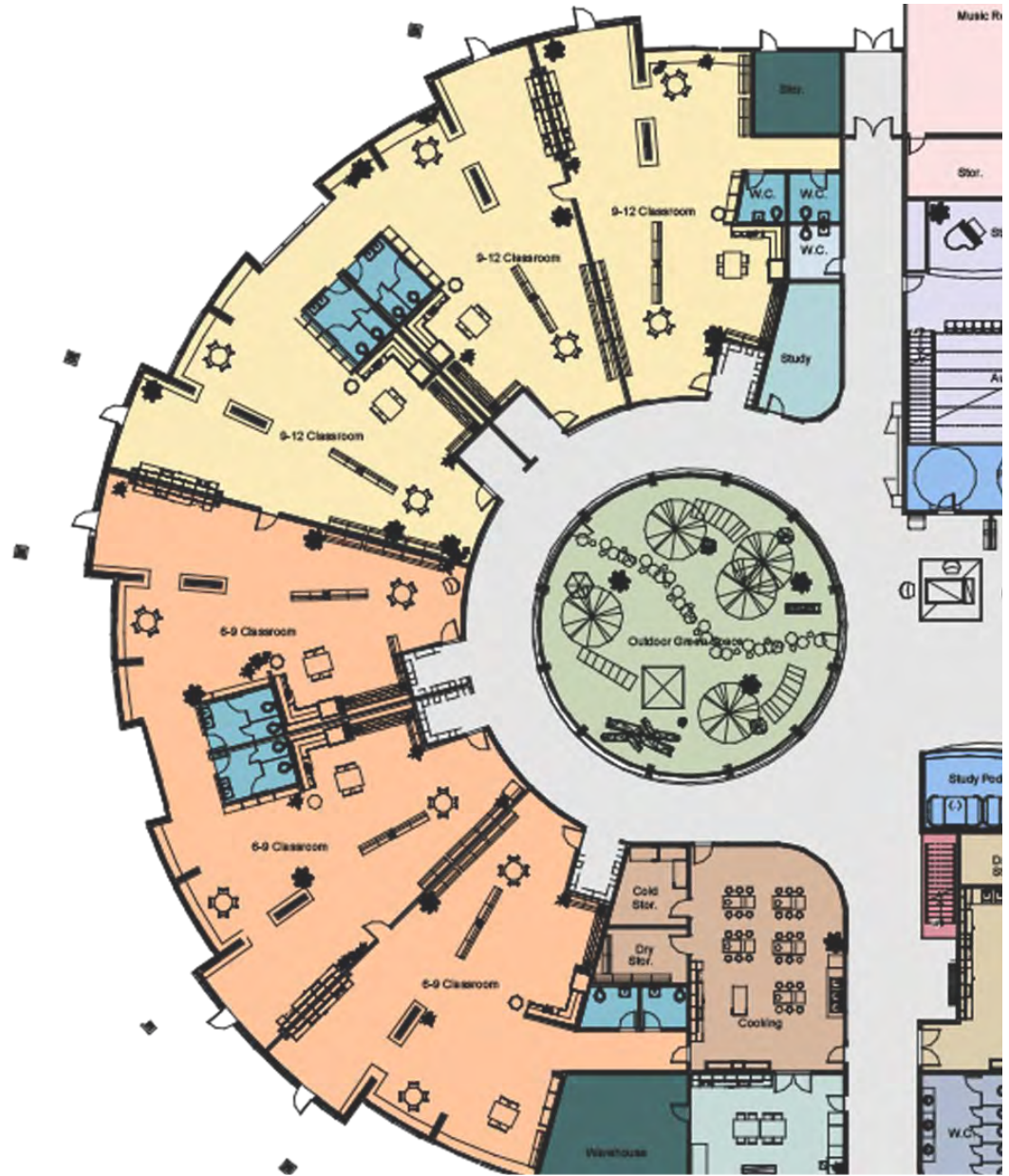


UPPER ELEMENTARY CORRIDOR

LEVEL 1



- Storage
- Class Restroom
- Study Room
- Staff Restroom
- Outdoor Greenspace
- 6-9 Age Classroom
- 9-12 Age Classroom
- Cooking Classroom
- Warehouse
- Stairs
- Public Restroom
- Learning Hub
- Auditorium
- Music Room
- Kitchen



AREAS OF LEARNING WITHIN THE CLASSROOM

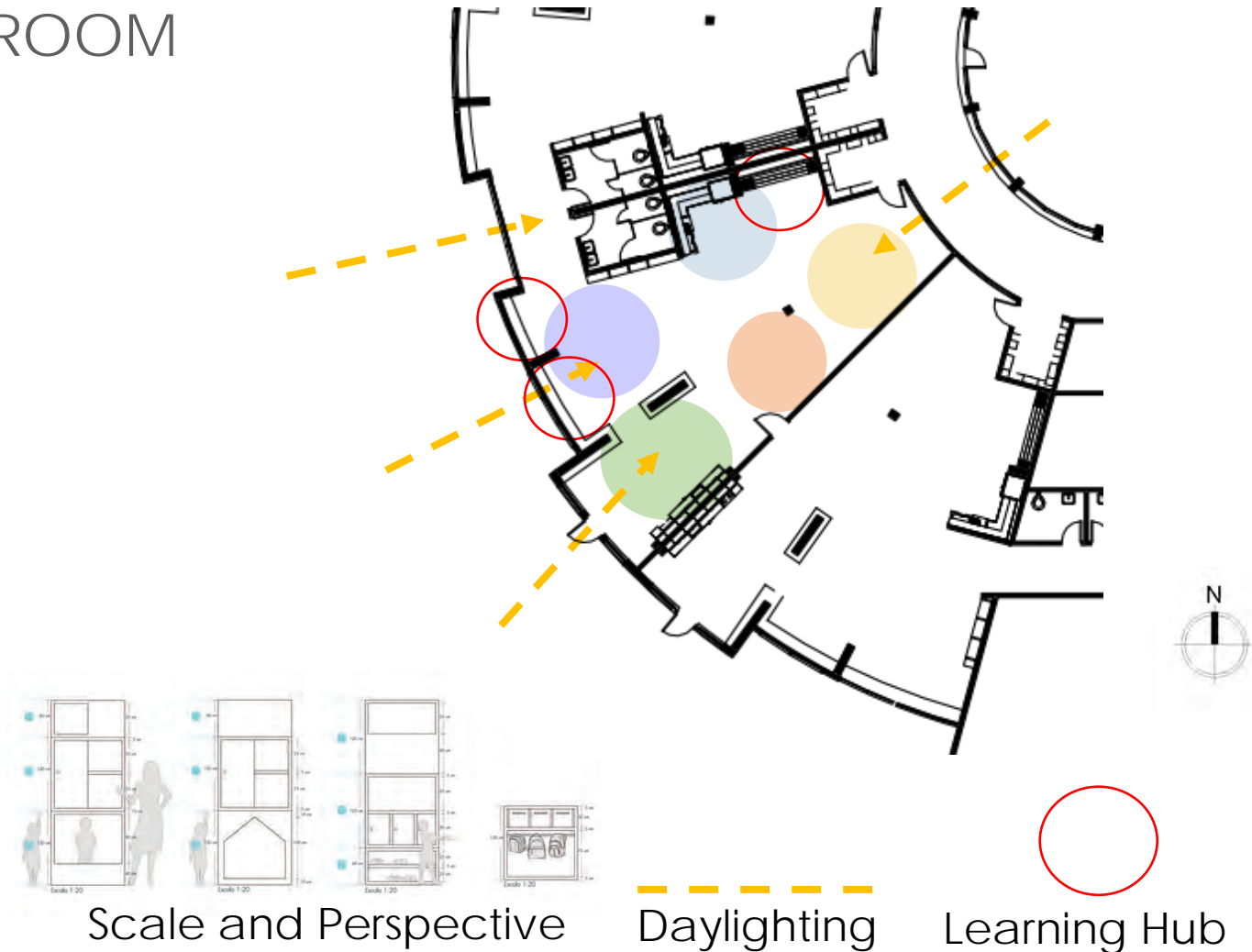
SENSORIAL

PRACTICAL

CULTURAL

MATH

LANGUAGE



Scale and Perspective

Daylighting

Learning Hub



CLASSROOM

LEVEL 1



-  Storage
-  Class Restroom
-  Study Room
-  Staff Restroom
-  Outdoor Greenspace
-  6-9 Age Classroom
-  Cooking Classroom
-  Warehouse
-  Greenhouse
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-  Stairs
-  Commercial Kitchen
-  Janitor
-  Learning Hub





GARDEN ROOM



GREENHOUSE

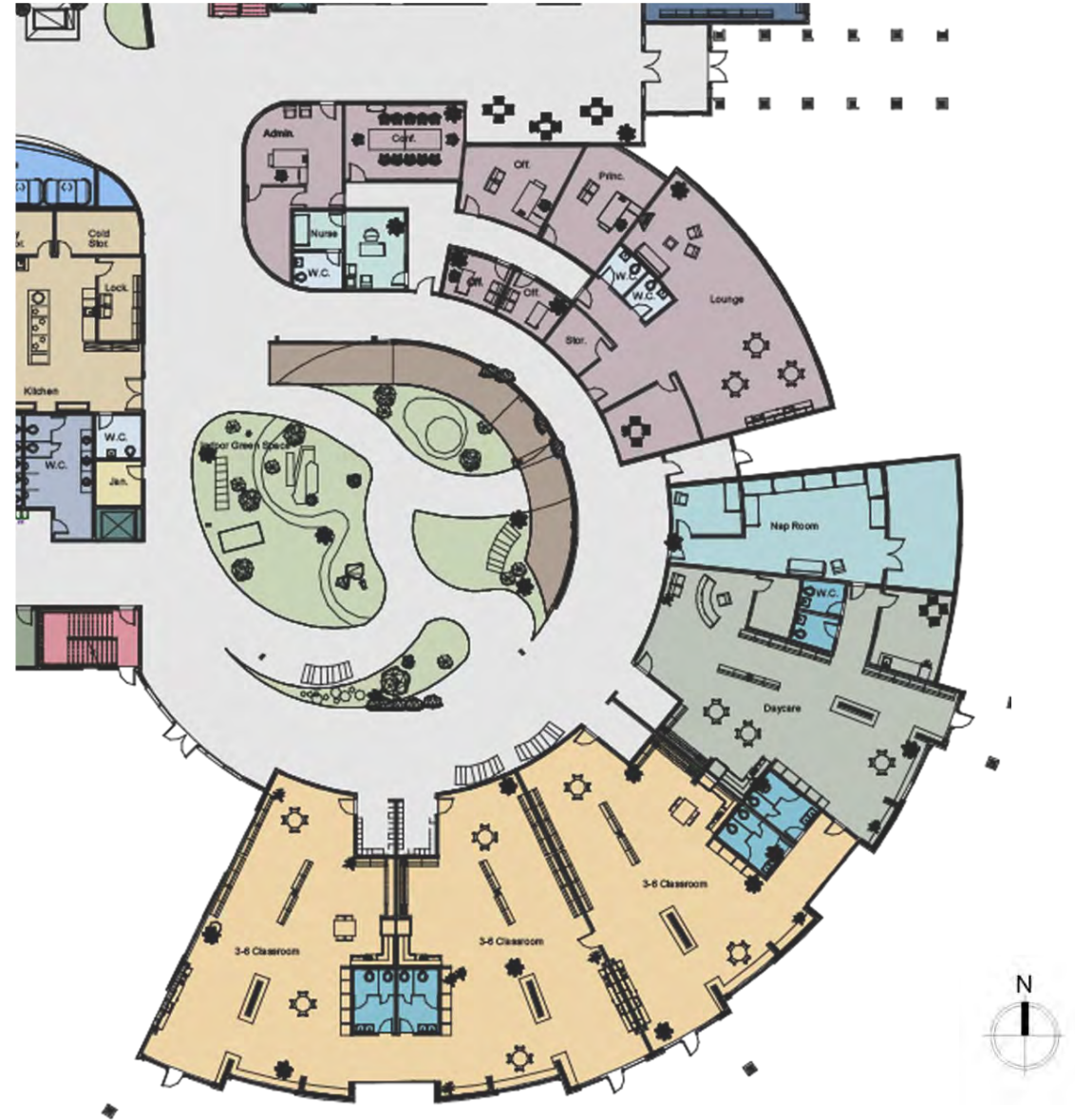
THE BENEFITS OF HAVING A SCHOOL GARDEN

- Improved Academic Outcomes
- Improved Social Development
- Physical and Mental Health Promotion
- Positive Community Impact

LEVEL 1



- Storage
- Class Restroom
- Administration
- Staff Restroom
- Indoor Greenspace
- 3-6 Age Classroom
- Cooking Classroom
- Nurse
- Faculty Daycare
- Public Restroom
- Mechanical
- Stairs
- Commercial Kitchen
- Janitor
- Learning Hub
- Elevator
- Nap Room
- Ramp

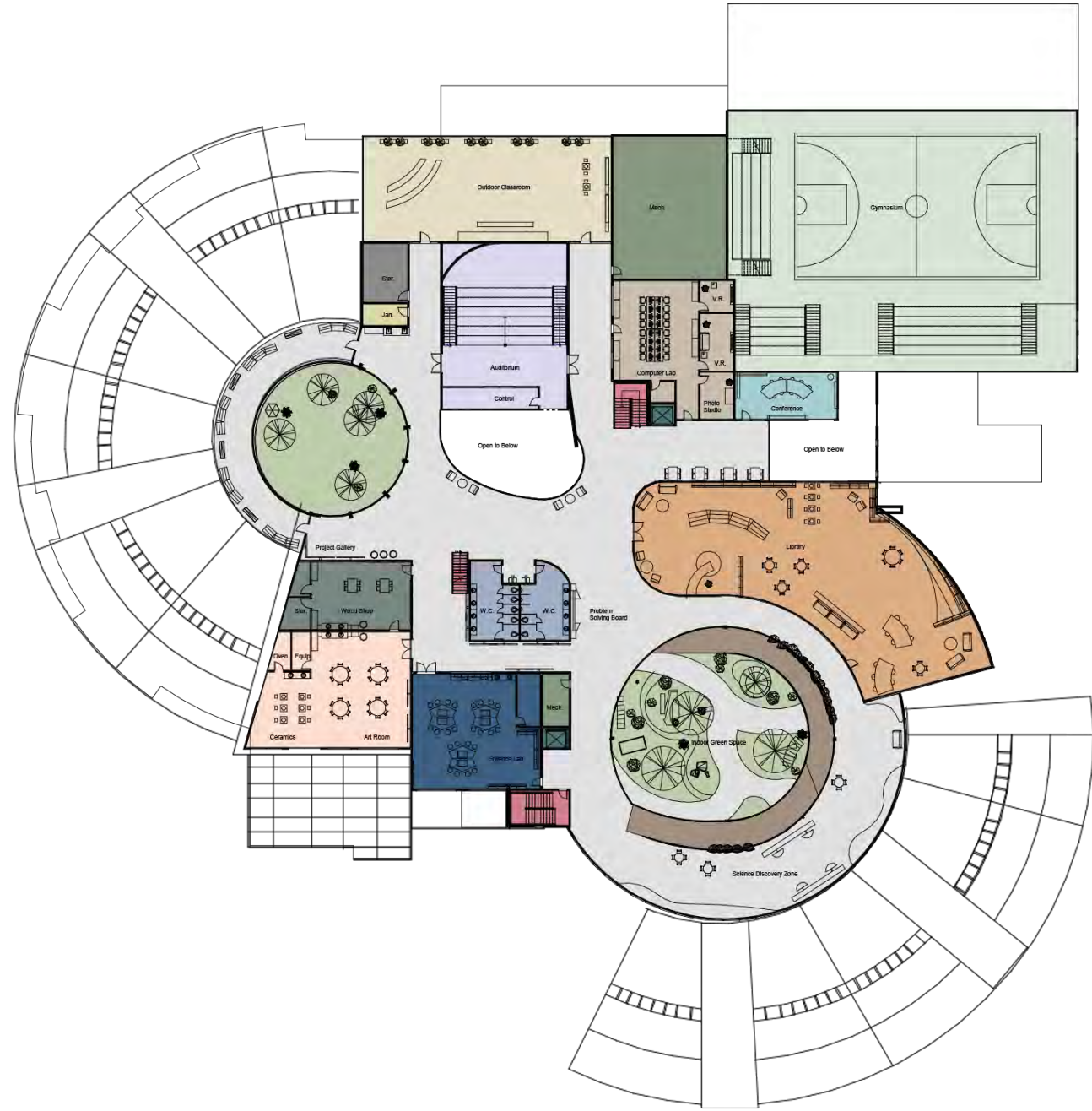




INDOOR GREEN SPACE

LEVEL 2

- Gymnasium
- Auditorium
- Conference Room
- Computer Lab
- Elevator
- Stairs
- Outdoor Classroom
- Mechanical
- Storage
- Janitor's Closet
- Public Restroom
- Wood Shop
- Ceramic/ Art Studio
- Science Lab
- Library
- Ramp





THANK YOU